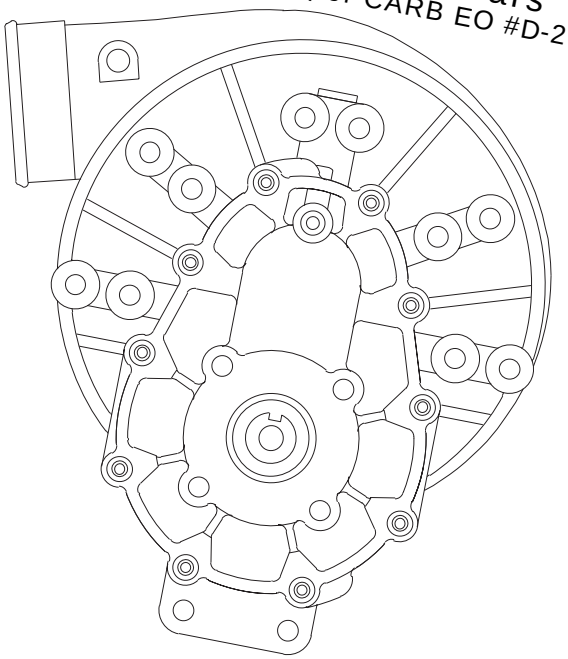
Ford SVT Contour/ Mercury 2.5L V-6 Cougar

(5 Speed Manual Transmission Only) Supercharger System Installation Instructions

1998-2000 Model Years

50 State Smog Legal per CARB EO #D-213-17



VORTECH®

ENGINEERING, LLC

1650 PACIFIC AVENUE • CHANNEL ISLANDS, CA 93033-9901 • (805) 247-0226
FAX (805) 247-0669 • www.vortechsuperchargers.com • M-F 8:00 AM - 4:30 PM PST

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11JAN02 V2.0*(Cougar (4FS V2.0))*

FOREWORD

Proper installation of this supercharger kit requires general automotive mechanic knowledge and experience. Please browse through each step of this instruction manual *prior* to beginning the installation to determine if you should refer the job to a professional installer/technician. Please call Vortech Engineering for installers in your area.

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SVT CONTOUR/COUGAR IMPORTANT NOTES

SVT Contour Off-Highway Use

When driving the vehicle on non-public roads (off-road applications such as racing/high rpm) Vortech strongly recommends reducing the spark plug gap down to .032".

Electronic Control Module

This kit requires ECM modification and the installation of a Vortech/Superchips ECM Module. The ECM must be sent directly to Vortech by the installing customer (the charge for this service with module installation has been included in the purchase price).

- Included in this kit is a prepaid next-day air shipping box and a credit tag for one (1) Vortech/Superchips ECM Module.
- The modules are made specifically for each individual vehicle with respect to the factory ECM calibration.
- Simply contact the Vortech Service Department at (805) 247-0226 to request a Return Authorization Number (See ECM Module Credit Tag for more details).
  - Mail to Vortech the enclosed "ECM Module Credit Tag" (send original tag - no photocopies will be accepted) and ECM in the supplied box.
  - Turnaround time will be 1-2 days (each application varies). Vortech will give an estimate at the time of your order.

Your Vortech/Superchips ECM Module comes with a twelve (12) month limited warranty from the original date of purchase of your supercharger system (see Owner's Manual for details).

Battery Relocation

Battery relocation is **required** for complete kit installation. Additional parts must be purchased separately for mandatory battery relocation:

- **Option 1:** Vortech offers a universal battery relocation kit (Vortech #8N150-010) which allows the vehicle's existing battery to be relocated into the trunk.
- **Option 2:** Vortech offers a Cougar specific relocation kit (Vortech #4FS150-010) to mount and connect a Dyna-Batt "mini" dry cell battery to underneath the left front of the vehicle (underhood). The bracketry/hardware sold in this option requires the purchase of a Performance Distributors battery part #5575B (top post). Contact Performance Distributors at:

2699 Barris Drive
Memphis, TN 38132
Tel: 901 396-5782, Fax: 901 396-5783

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1998-2000
FORD SVT CONTOUR/ MERCURY 2.5L V-6 COUGAR
Installation Instructions

50 State Smog Legal, as per CARB EO #D-213-17

Congratulations on selecting the best performing and best backed automotive supercharger available today... the VORTECH® Supercharger!

Before beginning this installation, please read through this entire instruction booklet and the Street Supercharger System Owner's Manual which includes the Automotive Limited Warranties Program and the Warranty Registration form.

Vortech supercharger systems are performance improving devices. In most cases, increases in torque of 30-35% and horsepower of 35-45% can be expected with the boost levels specified by Vortech Engineering. This product is intended for use on healthy, well maintained engines. Installation on a worn-out or damaged engine is not recommended and may result in failure of the engine as well as the supercharger. **Vortech Engineering is not responsible for engine damage.**

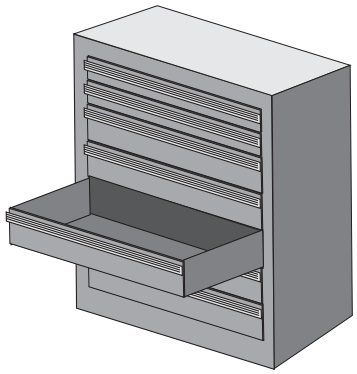
Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

For best performance and continued durability, please take note of the following key points:

1. Use only premium grade fuel 92 octane or higher (R+M/2).
2. The engine must have stock compression ratio.
3. If the engine has been modified in any way, check with Vortech prior to using this product.
4. Always listen for any sign of detonation (pinging) and discontinue hard use (no boost) until problem is resolved.
5. Perform an oil and filter change upon completion of this installation and prior to test driving your vehicle. Thereafter, always use a high grade SF rated engine oil or a high quality synthetic, and change the oil and filter every 3,000 miles or less. **Never attempt to extend the oil change interval beyond 3,000 miles, regardless of oil manufacturer's claims as potential damage to the supercharger may result.**
6. Before beginning installation, replace all spark plugs that are older than 1 year or 10,000 miles with original heat range plugs as specified by the manufacturer and reset timing to factory specifications (follow the procedures indicated within the factory repair manual and/or as indicated on the factory underhood emissions tag). **Do not use platinum spark plugs unless they are original equipment.** Change spark plugs at least every 20,000 miles and spark plug wires at least every 50,000 miles.

TOOL & SUPPLY REQUIREMENTS:

- Factory Repair Manual
- 3/8" Socket and Drive Set: SAE & Metric
- 1/2" Socket and Drive Set: SAE & Metric
- 3/8" NPT Tap and Handle
- Adjustable Wrench
- Open End Wrenches: 3/8", 7/16", 1/2", 9/16"
- Center Punch
- Ford Springlock 3/8" Fuel Fitting Disconnect Tool
- 5 Quarts SH/CF Rated Quality Engine Oil
- Oil Filter and Wrench
- Flat #2 Screwdriver
- Phillips #2 Screwdriver
- Heavy Grease
- Silicone Sealer
- Drill Motor
- 1/8", 3/16", 27/64" Drill Bits
- 9/16” Rota Broach Tool (also available from Vortech)
- Molylube
- Wire Strippers and Crimpers
- Utility Knife



If your vehicle has in excess of 10,000 miles since its last spark plug change, then you will also need:

- Spark Plug Socket
- NEW Spark Plugs

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1998 FORD SVT CONTOUR/ MERCURY 2.5L V-6 COUGAR

Part No. 4FS218-010SQ/018SQ

PARTS LIST

IMPORTANT: *Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.*

Part Number	Description	Quantity
2D118-050	**V-9 F-TRIM SQ SUPERCHARGER ASSY**	**1**
4FS111-021	**SUPERCHARGER MTG. ASSY.**	**1**
4FS110-034	S/C Mtg Plate Assy. Cougar	1
7K312-001	5/16" Flat Washer, AN	11
7A312-175	5/16" X 18 X 1.75" Bolt	6
7C080-045	8mm X 1.25 x 45mm Bolt	5
4FS111-034	**SUPERCHARGER DRIVE ASSY.**	**1**
2D160-214	Tube Assy. Ext Drive	1
2D170-224	Assy. Ext Drive, Cougar/GSR	1
4FS110-010	Brg Mtg Plate Assy.	1
7F437-000	7/16" - 14 Hex Nut	1
7J438-081	7/16 SAE Washer Plated	1
2A017-037	Spacer, Threaded Hex, 1.490"	2
2A017-038	Spacer, Threaded Hex, 1.735"	1
2A017-039	Spacer, Idler Plt, 1.926"	1
4FS010-020	Plate, Idler Mounting	1
2A017-044	Spacer, Idler, .509"	1
2A046-923	Belt, K060923-Gates Cougar	1
4FA016-150	Idler Pulley, 6Rib 3.5" Flanged	1
7A312-075	5/16-18 x 3/4 HXCS GR5 Zinc	12
7C060-025	M6 x 1.00" x 25mm Hex	1
7J006-093	6mm Washer, Plated	1
7C080-025	8mm x 1.25 x 25 HXHD	3
7K312-001	5/16" AN Washer	18
7C080-056	8mm x 1.25 x 55 HXHD Zinc Plt.	1
7C080-075	8mm x 1.25 x 75 Stud	2
7C080-100	8mm x 1,25 x 100 HXHD Zinc Plt.	1
2A036-333	S/C Pulley, 3.33" 6 Groove	1
8R101-001	Pulley Retainer Assy. 6 Rib	1
7A437-201	7/16-14 x 2.00 HXHD Zinc Plt	1
7F250-040	1/4-20 Nut Plate	2
7A250-101	1/4-20 x 1 HXHD CPSC	3
7J250-001	1/4 SAE Washer, Pltd.	4
2D070-159	Large Bearing, Extended	2
7U100-084	Snap Ring, V9	1
7X100-025	Wave Washer - Large	1
2D030-041	Brg Hsg, Ext Drive, Mach	1
2A017-093	Spacer, S/C Ply, .093"	1
7A312-079	5/16-18 x .75 Button Hd Plt.	1
7F250-021	1/4-20 Nylock Nut Zinc Pltd.	1
4FS112-010	**AIR INTAKE ASSY.**	**1**
4FS112-001	Air Inlet Duct	1
8H040-010	Air Filter	1
4FS110-070	MAF/Filter Mount Brkt	1
7U035-002	3" Flex Hose x 3.5" Long	1
7R002-044	Flex Hose Clamps	2
7S300-002	3" Cast Elbow	1
7U030-056	3/8" Crank Vent Hose x 18"	1
7P375-098	3/8" Crank Vent Hose TEE	1
7U100-052	IAT Sensor Grommet	1

Part Number	Description	Quantity
7P750-102	90° Bypass Hose Fitting	1
7P250-047	1/4 NPT x 90° x 3/8" Vent Hose Fitting	1
7R002-056	Inlet Duct Clamp	1
7S300-200	3" Sleeve to MAF	1
7R002-048	Clamps to MAF/Sleeve	2
4FS010-040	Fuse Box Bracket	1
7A250-101	1/4-20 x 1 SHCS	4
7F250-021	1/4-20 Nuts	4
7J250-001	1/4 Washers	8
7E010-046	#8 SHTMTL Screw x .75	3
7J008-001	#8 Washers	3
4FS212-020	**AIR DISCHARGE ASSY.**	**1**
4FS112-020	Discharge Duct	1
7P375-106	PCV Valve	1
7S250-200	2.5" Sleeves	2
7R002-040	Sleeve Clamps	4
8D001-001	Bypass	1
7U034-016	1" Hose x 4.25" (Inlet)	1
7U034-016	1" Hose x 4.25" (Outlet)	1
7R002-016	Bypass Clamps	4
7U030-046	Vacuum Hose x 18"	1
7P156-082	TEE	1
7U133-060	.75 x 90° Elbow For IAC	1
7R002-010	#10 Clamps	2
7S275-251	2.75/2.50 Reducer	1
7R002-044	#44 Clamp	4
4FS130-026	**OIL FEED ASSY.**	**1**
7U030-026	1/4" Oil Feed Hose x 26"	1
7P525-067	.525 Crimp Ferrules	2
7P250-066	-4 Swivel x 1/4 Hose	2
7P125-026	#4 x 90 x 1/8 NPT	1
7P250-036	#4 x 1/4 NPT Straight	1
4FS130-036	**OIL DRAIN ASSY.**	**1**
7R001-008	#8 Stnls Hose Clamp	2
7P375-047	3/8 NPT x 2" Nipple	1
7U030-036	1/2" Oil Drain Hose x 14"	1
7U100-055	Tie Wrap, 6" Nylon	1
4FS100-010	Tube Nut Assy.	1
7P375-004	1/2" Male SAE Flare x 3/8 NPTF	1
4FS238-068	**FMU w/LINES**	**1**
7P156-082	TEE	1
7U100-055	Tie Wrap	4
7U030-046	5/32 Vac. Hose x 18"	1
4FH145-030	FMU Line Assy. Female x 22"	1
4FH145-050	FMU Line Assy. Male x 30"	1
6Z110-136	7:1 FMU Assy.	
4FS101-001	**FUEL PUMP ASSY.**	**1**
7P500-004	1/2" Male Fuel Fitting	1
7P312-003	5/16" Female Fitting	1
8F001-002	Fuel Pump	1
8F101-200?	Pump Wiring Harness	1
7U031-018	5/16 Fuel Hose x 24"	1

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1998 FORD SVT CONTOUR/ MERCURY 2.5L V-6 COUGAR

Part No. 4FS218-010SQ/018SQ

PARTS LIST

IMPORTANT: *Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.*

Part Number	Description	Quantity
7U030-050	1/2 Fuel Hose x 13”	1
7R004-003	14.5 Stepless Clamps	2
5W001-022	Scotchlock	1
5W001-002	Fuse Tap	1
5W001-011	.25 x 14 GA Ring Term.	1
5W001-014	Fuse Holder	1
5W001-015	Fuse	1
7J010-001	#10 Washer	5
7U100-055	Tie Wrap	5
5W001-019	12 GA Butt Connector	1
7R001-004	#4 Hose Clamp	2
5W001-010	Female Slide	1
7R003-027	Adel Clamp	1
7E010-075	#12 Hex Hd. Shtmtl Screw	2
7C008-032	8-32 X 3/4 HXHD	1
7F008-032	8-32 Lock Nut	1
7J008-001	#8 Flat Washer	1
5W001-001	Wire Tap	1
4FS114-010	**WATER TUBE ASSY.**	**1**
4FS017-021	Radiator Spacer, Left	1
4FS017-031	Radiator Spacer, Right	1
4FS017-011	Radiator Spacer, Round	2
7C060-035	M6 x 1.0 x 35 Bolt	2
7C060-045	m6 x 1.0 x 45 Bolt	2
7J006-093	M6 Washer	4
7P625-017	ø5/8 x 3.25 Union (Surge Tank)	1
4FS014-011	Water Crossover Tube (modified)	1
7R001-008	#8 Hose Clamps	2
4FS120-020	**ECM Module Coupon Assy.**	**1**

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1999-2000 FORD SVT CONTOUR/ MERCURY 2.5L V-6 COUGAR

Part No. 4FS218-020SQ/028SQ

PARTS LIST

IMPORTANT: *Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.*

Part Number	Description	Quantity
2D118-050	**V-9 F-TRIM SQ SUPERCHARGER ASSY**	**1**
4FS111-021	**SUPERCHARGER MTG. ASSY.**	**1**
4FS110-034	S/C Mtg Plate Assy. Cougar	1
7K312-001	5/16" Flat Washer, AN	11
7A312-175	5/16" X 18 X 1.75" Bolt	6
7C080-045	8mm X 1.25 x 45mm Bolt	5
4FS111-034	**Supercharger Drive Assy.**	**1**
2D160-214	Tube Assy. Ext Drive	1
2D170-224	Assy. Ext Drive, Cougar/GSR	1
4FS110-010	BRG MTG PLATE ASSY.	1
7F437-000	7/16" - 14 Hex Nut	1
7J438-081	7/16 SAE Washer Plated	1
2A017-037	Spacer, Threaded Hex, 1.490"	2
2A017-038	Spacer, Threaded Hex, 1.735"	1
2A017-039	Spacer, Idler Plt, 1.926"	1
4FS010-020	Plate, Idler Mounting	1
2A017-044	Spacer, Idler, .509"	1
2A046-923	Belt, K060923-Gates Cougar	1
4FA016-150	Idler Pulley, 6Rib 3.5" Flanged	1
7A312-075	5/16-18 x 3/4 HXCS GR5 Zinc	12
7C060-025	M6 x 1.00" x 25mm Hex	1
7J006-093	6mm Washer, Plated	1
7C080-025	8mm x 1.25 x 25 HXHD	3
7K312-001	5/16" AN Washer	18
7C080-056	8mm x 1.25 x 55 HXHD Zinc Plt.	1
7C080-075	8mm x 1.25 x 75 Stud	2
7C080-100	8mm x 1,25 x 100 HXHD Zinc Plt.	1
2A036-333	S/C Pulley, 3.33" 6 Groove	1
8R101-001	Pulley Retainer Assy. 6 Rib	1
7A437-201	7/16-14 x 2.00 HXHD Zinc Plt	1
7F250-040	1/4-20 Nut Plate	2
7A250-101	1/4-20 x 1 HXHD CPSC	3
7J250-001	1/4 SAE Washer, Pltd.	4
2D070-159	Large Bearing, Extended	2
7U100-084	Snap Ring, V9	1
7X100-025	Wave Washer - Large	1
2D030-041	Brg Hsg, Ext Drive, Mach	1
2A017-093	Spacer, S/C Ply, .093"	1
7A312-079	5/16-18 x .75 Button Hd Plt.	1
7F250-021	1/4-20 Nylock Nut Zinc Pltd.	1
4FS112-010	**AIR INTAKE ASSY.**	**1**
4FS112-001	Air Inlet Duct	1
8H040-010	Air Filter	1
4FS110-070	MAF/Filter Mount Brkt	1
7U035-002	3" Flex Hose x 3.5" Long	1
7R002-044	Flex Hose Clamps	2
7S300-002	3" Cast Elbow	1
7U030-056	3/8" Crank Vent Hose x 18"	1
7P375-098	3/8" Crank Vent Hose TEE	1
7U100-052	IAT Sensor Grommet	1
7P750-102	90° Bypass Hose Fitting	1
7P250-047	1/4 NPT x 90° x 3/8" Vent Hose Fitting	1
7R002-056	Inlet Duct Clamp	1
7S300-200	3" Sleeve to MAF	1
7R002-048	Clamps to MAF/Sleeve	2
4FS010-040	Fuse Box Bracket	1
7A250-101	1/4-20 x 1 SHCS	4
7F250-021	1/4-20 Nuts	4
7J250-001	1/4 Washers	8
7E010-046	#8 SHTMTL Screw x .75	3
7J008-001	#8 Washers	3
4FS212-020	**AIR DISCHARGE ASSY.**	**1**
4FS112-020	Discharge Duct	1
7P375-106	PCV Valve	1
7S250-200	2.5" Sleeves	2
7R002-040	Sleeve Clamps	4
8D001-001	Bypass	1
7U034-016	1" HOSE X 4.25" (Inlet)	1
7U034-016	1" HOSE X 4.25" (Outlet)	1
7R002-016	Bypass Clamps	4
7U030-046	Vacuum Hose x 18"	1
7P156-082	TEE	1
7U133-060	.75 x 90° Elbow For IAC	1
7R002-010	#10 Clamps	2
7S275-251	2.75/2.50 Reducer	1
7R002-044	#44 Clamp	4
4FS130-026	**OIL FEED ASSY.**	**1**
7U030-026	1/4" Oil Feed Hose x 26"	1
7P525-067	.525 Crimp Ferrules	2
7P250-066	-4 Swivel x 1/4 Hose	2
7P125-026	#4 x 90 x 1/8 NPT	1
7P250-036	#4 x 1/4 NPT Straight	1
4FS130-036	**OIL DRAIN ASSY.**	**1**
7R001-008	#8 Stnls Hose Clamp	2
7P375-047	3/8 NPT x 2" Nipple	1
7U030-036	1/2" Oil Drain Hose x 14"	1
7U100-055	Tie Wrap, 6" Nylon	1
4FS100-010	TUBE NUT ASSY.	1
7P375-004	1/2" Male SAE Flare x 3/8 NPTF	1
4FS114-010	**WATER TUBE ASSY.**	**1**
4FS017-021	Radiator Spacer, Left	1
4FS017-031	Radiator Spacer, Right	1
4FS017-011	Radiator Spacer, Round	2
7C060-035	M6 x 1.0 x 35 Bolt	2
7C060-045	m6 x 1.0 x 45 Bolt	2
7J006-093	M6 Washer	4
7P625-017	ø5/8 x 3.25 Union (Surge Tank)	1
4FS014-011	Water Crossover Tube (modified)	1
7R001-008	#8 Hose Clamps	2
4FS120-020	**ECM MODULE COUPON ASSY.**	**1**
8F060-038	**FUEL INJECTORS**	**6**
SW001-051	**JUMPER HARNESS**	**6**
4FS020-010	**INSTRUCTION MANUAL**	**1**

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1. PREPARATION/REMOVAL

A. Disconnect the positive and negative battery terminals.

B. Detach the electrical connections to the air flow meter and the air temperature sensor. Remove the entire air intake assembly. Remove the airbox and support bracket.

C. Drain the coolant from the radiator and set aside for reuse.

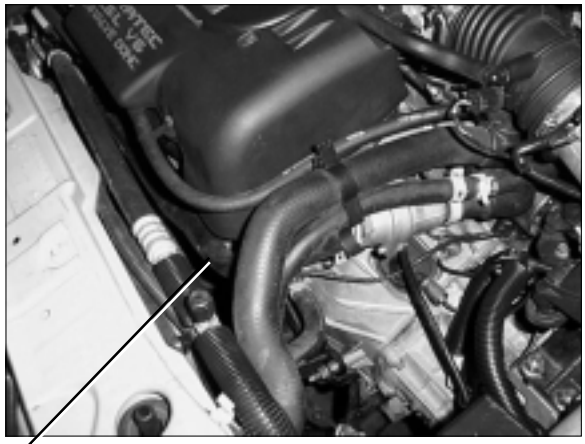
D. Detach the upper and lower radiator hoses from the radiator. Remove the three fasteners connecting the steel water crossover tube to the A/C line and the engine. Detach the water tube from the thermostat housing hose (see *Fig. 1-a*) and recovery tank and remove it from the vehicle. Leave all three rubber hoses attached to the water tube for reference when installing the new supplied tube onto the vehicle. Set the hardware aside for re-use.

E. Unplug the three electrical connections from the plastic fan shroud. Disconnect the wiring harness attached to the top and bottom of the fan shroud. Remove and set aside the two bolts securing the bottom of the A/C condenser to the radiator.

F. Remove the four bolts securing the two lower radiator brackets to the crossmember. Lower the radiator out of the vehicle, leaving the condenser in place.

G. Temporarily remove the two bolts attaching the radiator recovery tank to the vehicle. Set aside the tank for working clearance.

H. Unbolt the power steering cooler from the vehicle and swing aside temporarily. Do not detach the hoses.



Water crossover tube (remove)

Fig. 1-a

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2. FUSE BOX AND BATTERY RELOCATION

A. Remove the battery securing strap. Lift the battery and the plastic undertray out of the vehicle.

B. Remove the bolt securing the underhood fuse box to the vehicle.

C. Remove the battery mounting tray and install the supplied fuse box relocation bracket. (See *Fig. 2-a*.)

D. Mount the factory fuse box to the new bracket and secure it with the factory bolt. (See *Fig. 2-b*.)

E. Relocate the battery. (See note regarding battery relocation on *page iv*.)

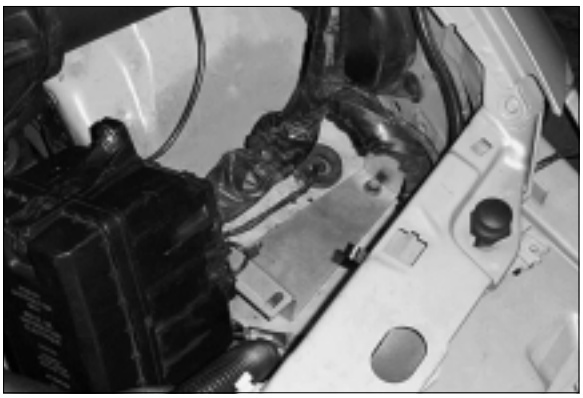


Fig. 2-a



Fig. 2-b

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3. OIL DRAIN

A. To provide an oil drain for the supercharger, it is necessary to make a hole in the front of the oil pan. Locate and mark the hole. (See *Fig. 3-a*.) This hole should be centered 7/16" from the bottom of the oil pan lip and 5/8" from the left-most edge of the oil pan.

B. Drill an 1/8" pilot hole at the center location.

C. Use a 9/16" roto broach to drill a hole in oil pan. Break through the pan gently, so the cut out piece does not go into the oil pan.

D. Tap the hole with a 3/8" NPT tap to approximately 1/2" deep or until fitting can be started. Pack the flutes of the tap with heavy grease to hold chips.

E. Thoroughly clean the threaded area. Reach inside the oil pan and retrieve any stray chips. Apply a small amount of silicone sealer to the new threads. Apply more sealer to the supplied 3/8" NPT nipple and secure it in the hole. Make sure a seal is formed all around the fitting. Thread the supplied 3/8" NPTF x 1/2 flare fitting onto the nipple. (See *Fig. 3-b, 3-d*.)

F. Install the supplied oil drain tube assembly onto the flare fitting. Before tightening the tube nut on the drain tube, angle the tube slightly upward at the open end so the oil will drain "downhill" into the pan.(See *Fig. 3-c*.)

G. Temporarily cover the oil drain tube end to keep any debris out.

H. Drain the engine oil, install a new filter and refill the engine with fresh oil.

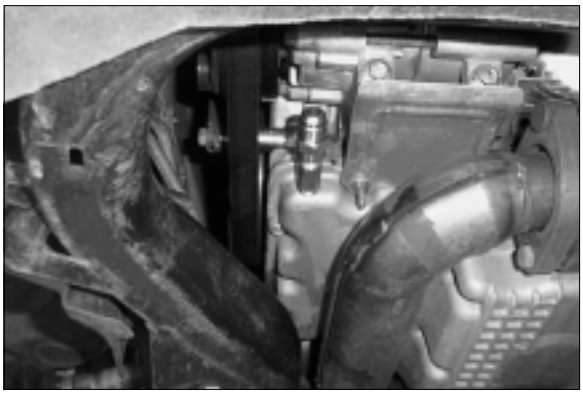


Fig. 3-b



Fig. 3-c

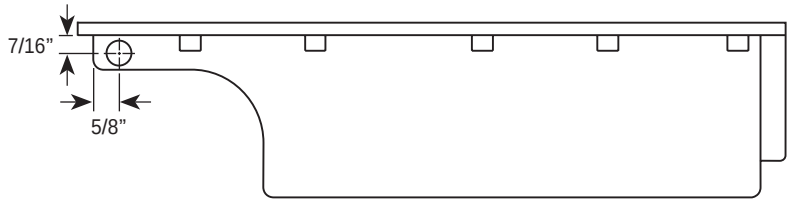


Fig. 3-a

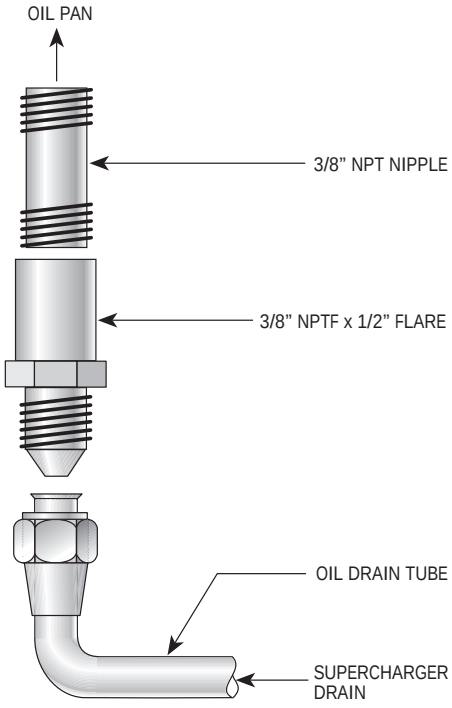


Fig. 3-d / View From Top

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4. OIL FEED

A. Remove the 1/4" NPT socket head plug located below the EGR valve on the rear-most cylinderhead. (See *Fig. 4-a*.)

B. Install the supplied 1/4" NPT to #4 straight fitting, using engine oil on the pipe threads. (See *Fig. 4-b*.)

C. Connect one end of oil feed line to the #4 fitting.

D. Temporarily cover the open end of the oil feed line to protect it from debris until connecting it to the supercharger in a later step.

> ***NOTE:*** *Teflon tape, or other sealant is **not** recommended at it might loosen and cause blockage of the .032" oil feed orfice, resulting in supercharger failure.*

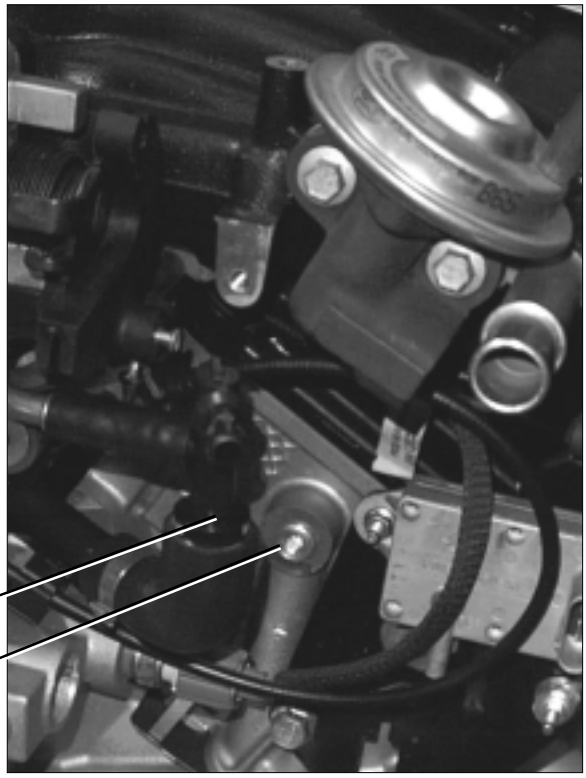


Fig. 4-a

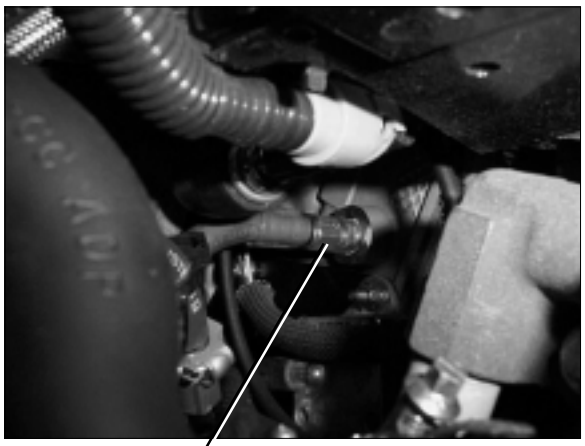


Fig. 4-b

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4. OIL FEED, cont'd.

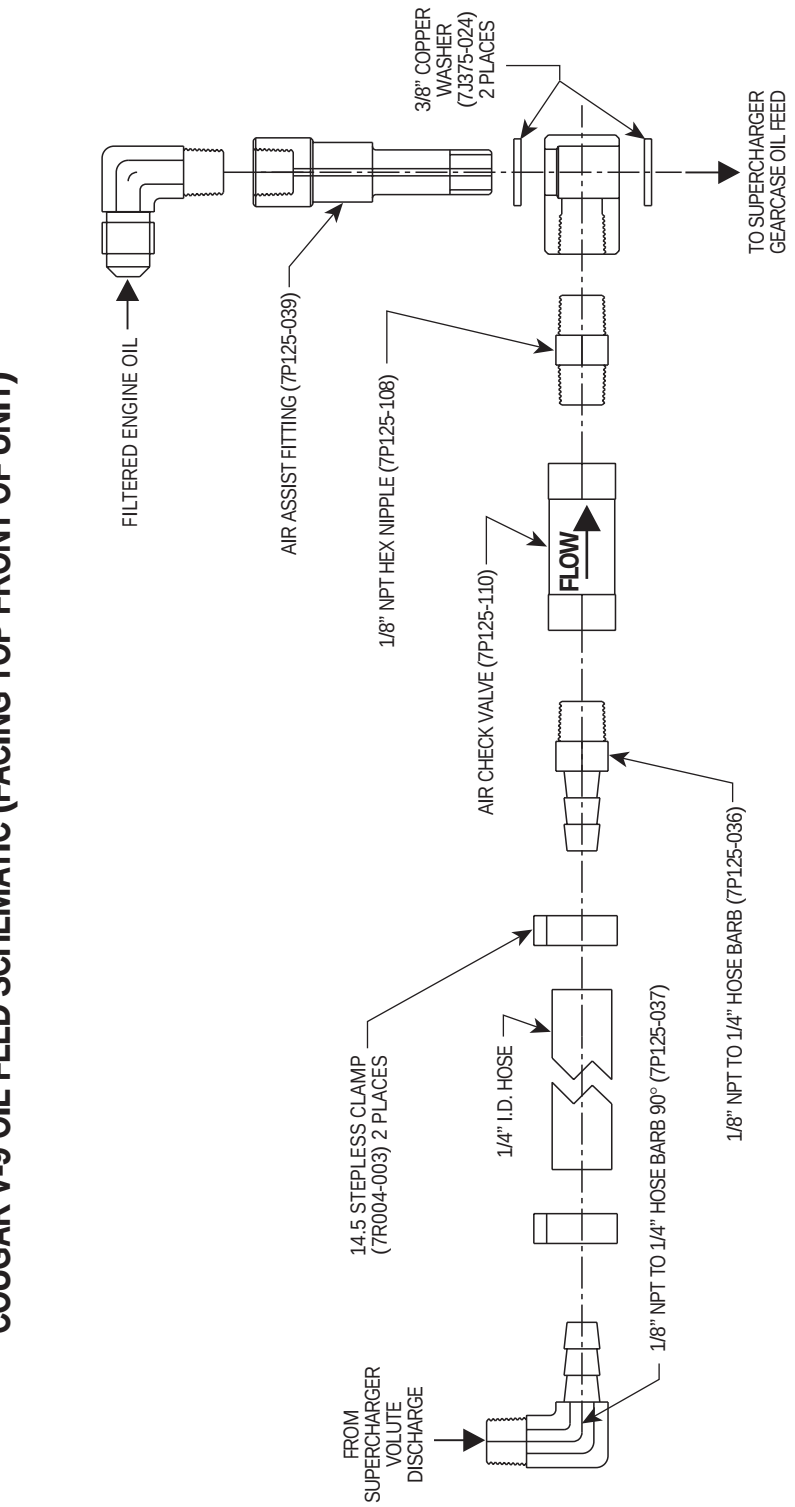


Fig. 4-c

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5. FUEL MANAGEMENT UNIT (FMU) INSTALLATION (1998 “Return Style” Vehicles Only)

A. Using a spring lock disconnect tool, disconnect the fuel return line at the fuel rail. The return line *does not* have the pressure test fitting on it.

B. Connect the FMU inlet hose to the fuel rail. Route the fuel line to the 90° brass fitting on the FMU. (See *Figs. 5-a, 5-b*.)

C. Connect the FMU outlet hose to the fuel line that returns to the tank. Route the fuel line to the straight brass fitting on the FMU.

D. Position the FMU against the firewall directly beneath the plastic panel, between the brake booster and the strut tower. (See *Fig. 5-c*.) Mark and drill two #30 holes in the firewall to mount the FMU. Trim firewall insulation as necessary and secure the FMU with the two #8 sheet metal screws provided.

E. Secure the fuel lines away from abrasion and exhaust heat with the provided tie wraps.

F. Tap into the vacuum line coming from the stock fuel pressure regulator with the supplied 5/32” hose and TEE. Route the new hose to the fitting on top of the FMU.

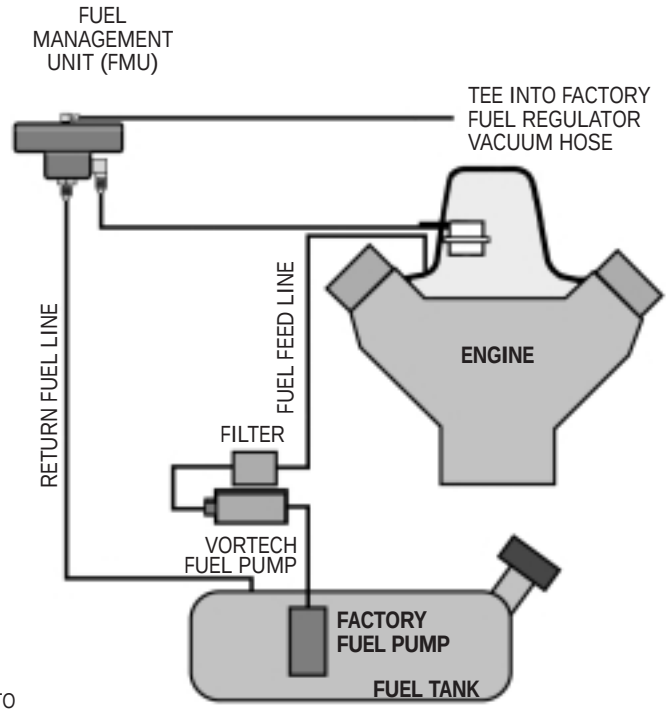


Fig. 5-b

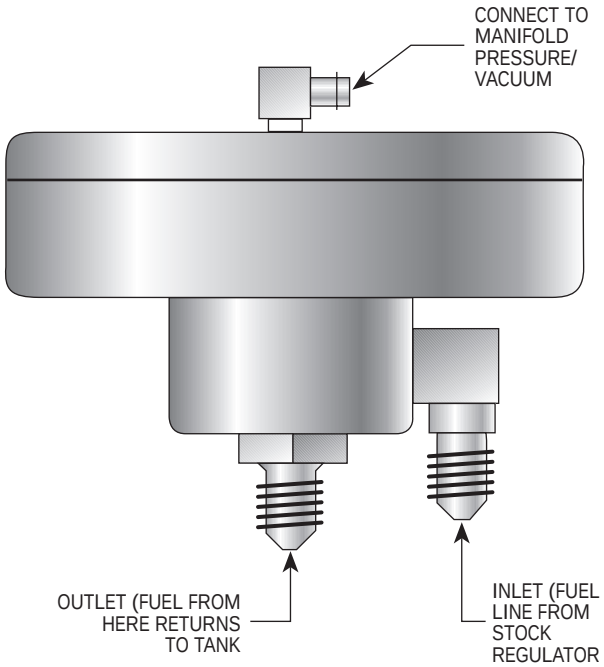


Fig. 5-a

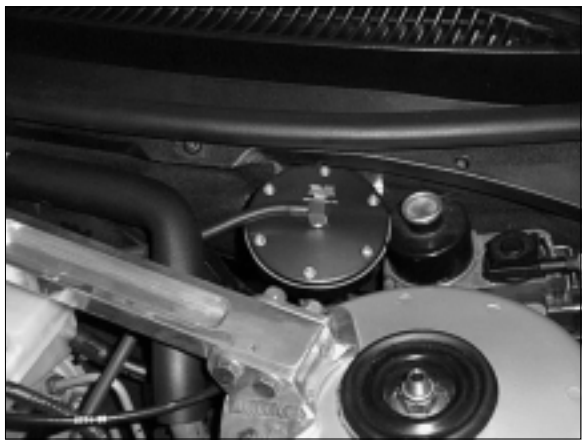


Fig. 5-c

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6. FUEL PUMP INSTALLATION (1998 “Return Style” Vehicles Only)

A. Jack up the rear of the car and support with jack stands.

B. Mount the fuel pump to the underbody in front of the fuel tank on the passenger’s side. Drill a 1/8” hole and secure the pump using the supplied adel clamp and #10 sheet metal screw. (See *Figs. 6-a, 6-b.*)

C. Remove the female hose end connected to the fuel filter inlet.

D. Insert the pump inlet hose assembly into the female supply hose fitting by gently pushing the fittings together and making sure they are locked.

E. Plug the female connector located on the pump discharge line onto the fuel filter inlet, making sure the hose assembly clears all sharp objects.

F. Mark and drill a 1/8” hole locating the relay next to the fuel pump as shown in *Figs. 6-a and 6-b*. Secure the relay with the sheet metal screw provided.

G. Lift the center divider located between the rear seats and remove the rubber cap beneath it to reveal the fuel pump wiring harness.

H. From relay terminal #85, tap the yellow wire into the factory fuel pump harness. Tap into the purple wire with pink stripes using the supplied scotch lock. (See *Fig. 6-c.*)

I. Connect the short red wire on relay terminal #87 to the (+) terminal of the fuel pump.

J. Connect the short black wire to a clean ground from relay terminal #86 (the relay mounting screw works well).

K. Route the remaining long red wire from relay terminal #30 to the battery. Use the supplied fuse and fuse holder before terminating at the 12V source.



Fig. 6-a



Fig. 6-b

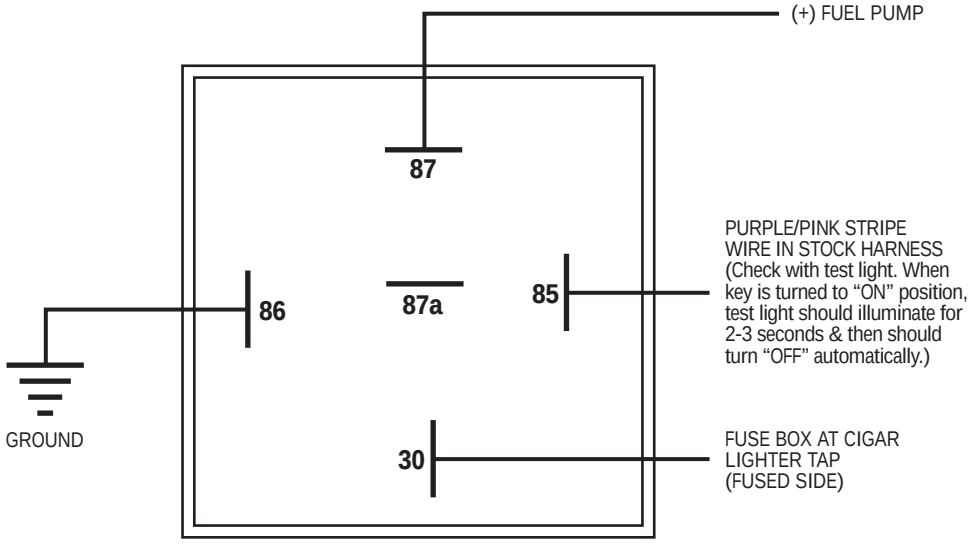


Fig. 6-c

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7. FUEL INJECTOR REPLACEMENT, (1999-2000 “returnless fuel” vehicles only)

A. Disconnect the EGR tube from the EGR valve at the rear of the upper intake manifold. Remove all bolts securing the upper manifold to the lower manifold. Unplug the electrical connector from the fuel pressure sensor. The upper manifold should move up enough to access all fuel injectors.

B. Disconnect the six fuel injector wiring clips and retainers from the fuel injectors. Release any residual fuel pressure from the rail by opening the schrader valve.

C. Remove the plastic from around the injector wires. Remove the bolts holding down the factory fuel rail. Lift up on the rail evenly and remove all six injectors.

D. Using a small amount of clean motor oil, lightly lubricate the O-rings on both ends of the Vortech supplied fuel injectors.

E. Install the new injectors into the fuel rail with the terminals facing outward.

F. Carefully lower the fuel rail/injector assembly down onto the intake manifold. Check to see that each injector has been seated properly.

G. Tighten down the fuel rail assembly with the original bolts.

H. Use the supplied jumper harnesses to connect the factory fuel injector plug to the newly installed fuel injectors. (See *Fig. 7-a*.)

I. Zip tie the jumper harnesses to the fuel rail so the stay clear of the manifold when reinstalled. (See *Fig. 7-a*.)

J. Reinstall all previously removed components.



Fig. 7-a

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8. POWER STEERING COOLER RELOCATION

A. Remove the factory installed nut clips from the cooler.

B. Take the factory nut clips and reinstall them on the side of the cooler tabs. Attach them so that the bolt can be threaded in from the front of the car.

C. Reinstall the cooler on the front side of the sheetmetal lip with the supplied 1/4-20 bolts and washers coming in from the front, moving the cooler slightly forward. (See *Figs. 8-a, 8-b*.)

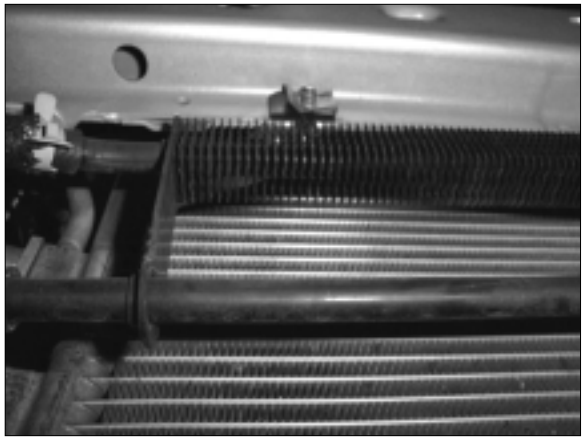


Fig. 8-a



Fig. 8-b

9. FAN SHROUD MODIFICATION

A. Unbolt the fan shroud from the radiator.

B. Trim the shroud as shown. Leave approximately 1/8” of material above the outer ring of the fan. (See *Figs. 9-a, 9-b, 9-c*)

C. Reinstall the fan shroud.



Fig. 9-a / Passenger’s Side.

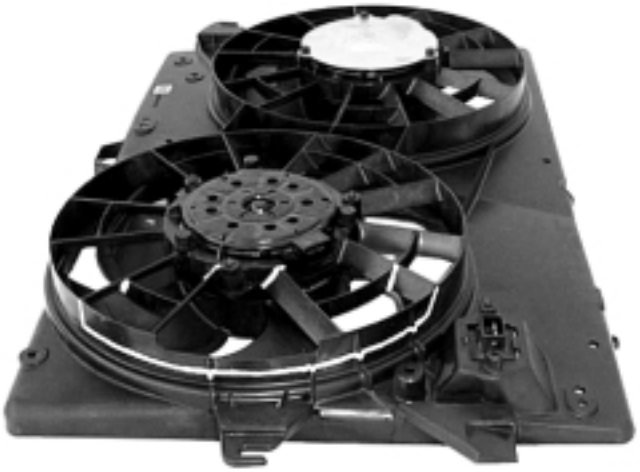


Fig. 9-b / Driver’s Side.

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9. FAN SHROUD MODIFICATION, cont'd.



Fig. 9-c / Driver's Side.

10. A/C CANISTER RELOCATION

A. Remove the bolt closest to the driver's side of the A/C canister bracket so that the canister can swivel and have a good amount of play.

B. Follow the hard lines from the canister that runs to the front of the vehicle. From underneath the vehicle, push the plastic harness while moving the lines down so the canister is able to move forward. (See *Fig. 10-a*.)

C. On the side you removed the bolt, take the supplied spacer and push the canister froward using the 1/4" hardware to secure it. This spaces the canister forward enough to clear the inlet tube. (See *Fig. 10-b*.)



Fig. 10-a

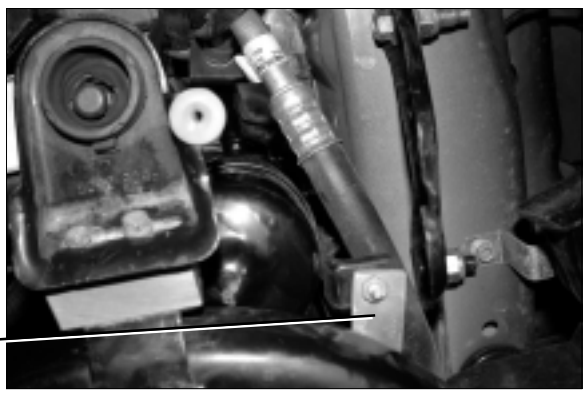


Fig. 10-b

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11. MAIN BRACKET ASSEMBLY

A. Replace the lowermost nut securing the factory power steering pump mounting plate with the supplied 1.735" long threaded hex spacer. (See *Fig. 11-a.*)

B. Remove the four timing cover bolts shown and install the two supplied studs in the centermost holes. (See *Fig. 11-a.*)

C. Remove the blue plastic cap from the drain fitting at the supercharger. Attach the supercharger to the mounting plate using the supplied 5/16-18 x 1.75 bolts, and 5/16" washers. (See *Fig. 11-b.*)

D. Slide the supplied 1/2" oil drain hose onto the supercharger drain fitting and secure with a #8 hose clamp.

E. Remove the five bolts indicated in *Fig. 11-c*, which secure the transmission to the bellhousing. Remove the plastic speed pickup to gain access to the rear-most bolt.

F. Remove the stock support bracket connecting the two aluminum A/C lines together near the A/C compressor. The A/C line may require slight bending for proper bracket fit in the next step.

G. Attach the supplied bearing plate to the engine front cover (see *Fig. 11-d*). Attach the two 1.490" long threaded hex spacers onto the two studs previously installed and thread the one M8 x 55 bolt with washer through the bearing plate and into the front cover in the top position. Do not tighten the bolt or spacers.

H. Lower the driveshaft and housing assembly into position. Ensure that the bearing plate previously installed is correctly positioned over it's mounting studs.

I. Secure the aluminum bearing housing located on the driveshaft housing assembly to the bearing plate previously mounted to the front cover. Thread four 5/16-18 x 3/4 bolts (*without* any washers) through the plate and into the housing. Do not tighten.

J. Lower the supercharger/mounting plate assembly into position. Join the supercharger and driveshaft housing together using the three 5/16-18 x 3/4 hex head bolts and one 5/16"-18 x .75 buttonhead bolt with the 5/16" washers supplied. (Install the buttonhead bolt in the position closest to the fans.) Apply "moly" lube or anti-sieze to the supercharger shaft splines before sliding them together. It may be necessary to turn the pulley on the extended drive assembly by hand to align the splines of the coupling. *Do not* force pieces together. Tighten the four 5/16 bolts.

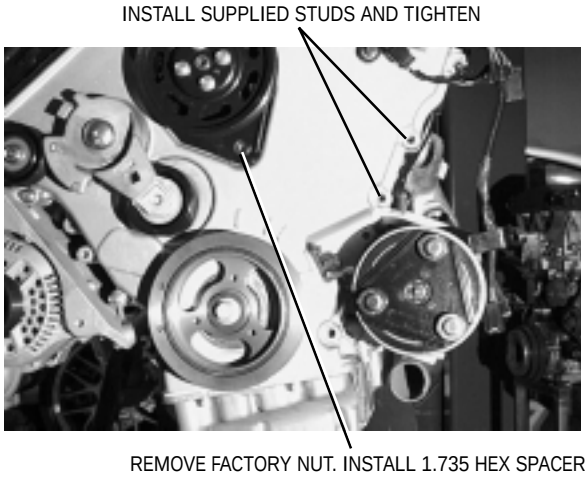


Fig. 11-a

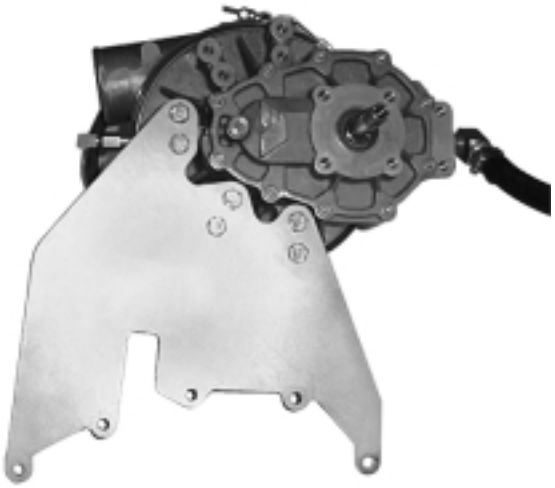


Fig. 11-b

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11. MAIN BRACKET ASSEMBLY, cont'd.

K. Install the five supplied M8 x 45mm bolts and washers securing the supercharger mounting bracket to the bellhousing and transmission. Reinstall the plastic speed pickup. Tighten all bolts previously left loose.

L. Install the drive pulley key onto the pulley shaft. Make sure that the supplied .093" pulley spacer is installed onto the shaft *before* the pulley is installed. Slide the pulley onto the shaft carefully. Do not hammer or pry on the pulley if clearance is tight as pulley and driveshaft damage may result. Lightly heat the pulley with a propane torch if required. Secure the pulley with the 3/8-24 bolt (apply one drop of blue Loctite to the bolt threads prior to installation), AN washer and pulley retainer. The retainer must mate directly to the outside of the pulley. Tighten the bolt.

M. Assemble the supplied idler pulley and spacer to the idler plate as shown in *Fig. 11-e and 11-f* using the 7/16-14 bolt, washer, dust shield and locknut.

N. Route the supplied supercharger drive belt per the supplied diagram. (See *Fig. 11-e.*) Lower the idler pulley/idler plate assembly, assembled in the previous step, into place and secure with the three 8mm x 25mm bolts and 5/16" washers supplied.

> ***NOTE:*** *The belt must be routed around the spacers* ***before*** *the idler plate is installed.*

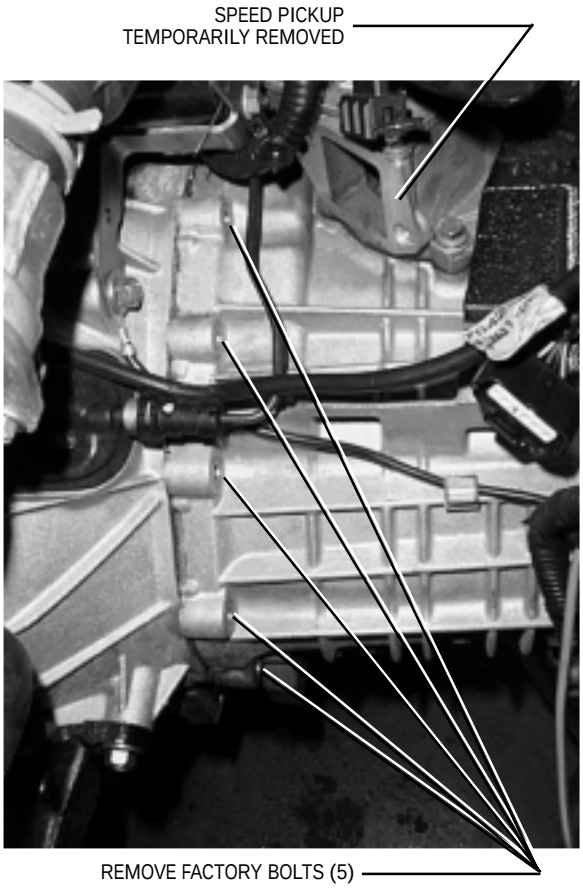


Fig. 11-c

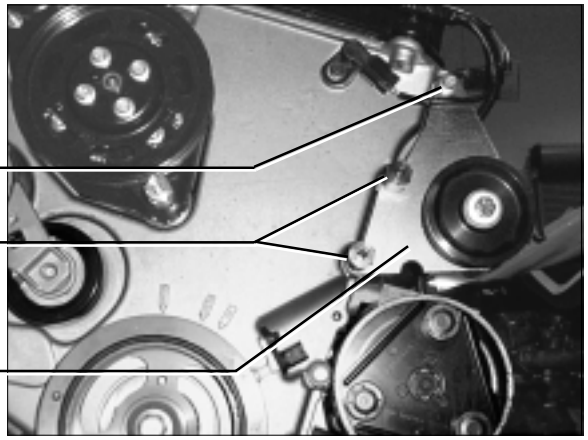


Fig. 11-d

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11. MAIN BRACKET ASSEMBLY, cont'd.

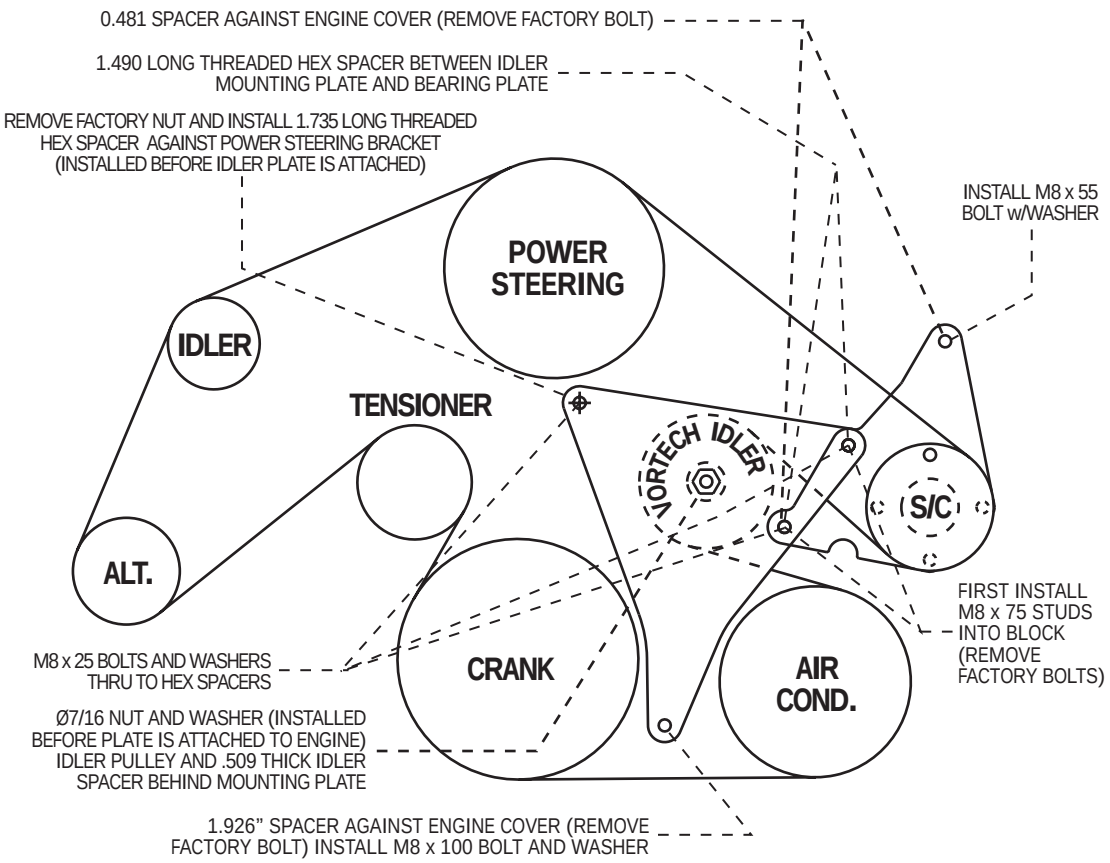
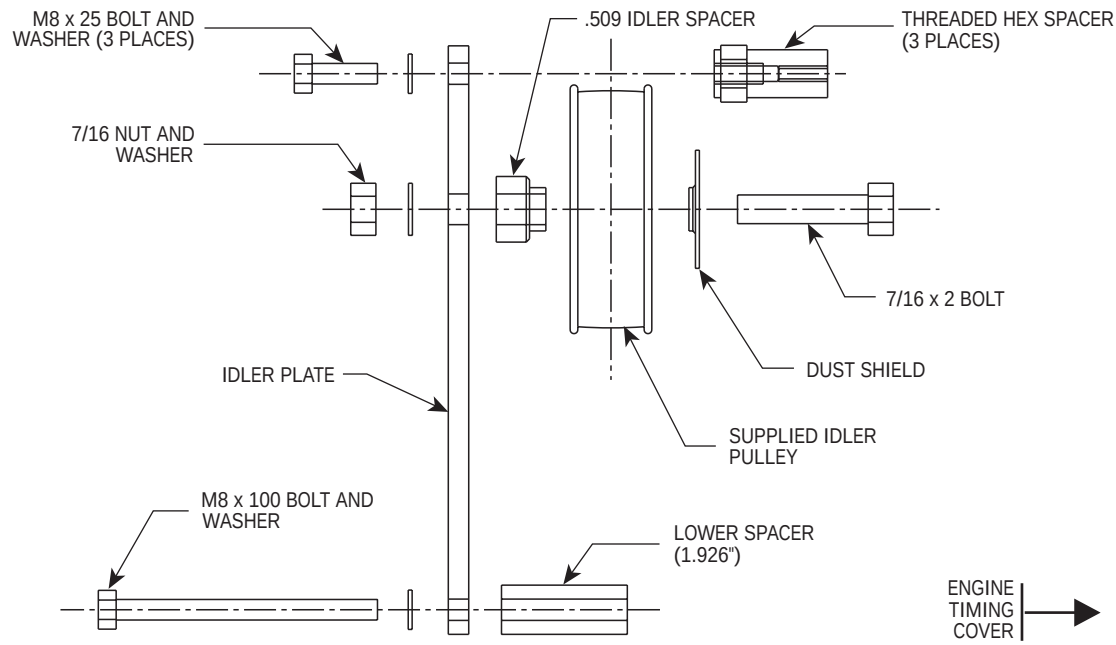


Fig. 11-e



IDLER PLATE ASSEMBLY (SIDE VIEW)

Fig. 11-f

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11. MAIN BRACKET ASSEMBLY, cont'd.

O. Unload the belt tensioner with a 3/8" drive wrench and install the belt, power steering pump pulley last.

P. Attach the supplied 90° x 1/8 NPT x #4 fitting into the feed nozzle on the supercharger. (See *Fig. 4-a in step 4*.) Connect the oil feed line to the supercharger. Connect the oil drain hose to the drain tube installed in the oil pan.

12. WATER PIPE INSTALLATION

A. Transfer the original three rubber hoses that were attached to the factory water pipe removed in step 1, to the supplied water pipe.

B. Install the new water crossover pipe assembly (with rubber hoses attached) onto the front of the engine using the original hardware.

C. Re-install the factory coolant recovery tank and hardware.

D. Cut the factory recovery tank hose as shown and install the supplied ø5/8 x 3.25 hose union (see *Fig. 12-a*). Secure with #8 hose clamps.

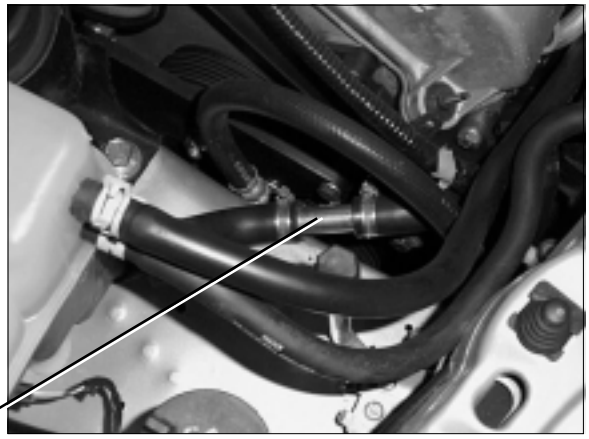


Fig. 12-a

13. AIR CONDITIONING MODIFICATIONS

A. On the air conditioning condenser there is a small black tab riveted to the driver's side, which fits a notch in the radiator. Trim 3/16" from the end of this tab and file smooth. (See *Fig. 13-a*.) The passenger's side can remain unaltered.

* **B.** Swing the A/C condenser back into place and notice how the trimmed tab rests on the plastic air deflector. Cut a notch in the plastic deflector, allowing the condenser to be pushed further forward. (See *Figs. 13-b, 13-c*.)

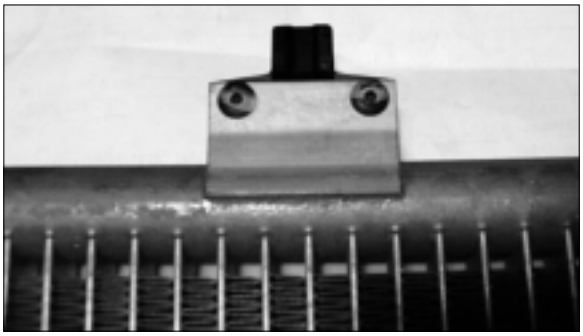


Fig. 13-a

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13. AIR CONDITIONING MODIFICATIONS, cont'd.

* **C.** Under the vehicle notice the two hard lines coming from the passenger's side of the condenser and where they rest against the edge of the plastic air deflector. Trim the air deflector until the line can be placed flush against the body. (See *Fig. 13-d.*)

D. Install the supplied spacer rings between the radiator and the factory radiator mounts. (See *Figs. 13-e, 13-f.*)

E. Re-install the radiator and condenser using the supplied spacer blocks and longer 6mm bolts. The thicker spacer goes on the driver's side. (See *Fig. 13-g.*)

> ***NOTE:*** *Re-installation will be tight. Be careful not to damage the radiator and condenser.*

F. Cut off 1/2" of the ends of the upper and lower radiator hoses where they attach to the radiator. Re-attach the power steering cooler.

* **G.** Remove the A/C line support strap at the front of the engine on the passenger's side. It connects the two hard lines coming out of the A/C compressor.

* **H.** Remove the bolt securing the A/C line to the body, located directly behind the passenger's side headlight. Push the A/C line up against the body, mark and drill a new 1/8" hole for the support clamp and secure it with the supplied #10 sheet metal screw. (See *Fig. 13-h.*)

* **I.** Bend the A/C line coming from the compressor, routed towards the passenger's side, until it is nearly parallel with the ground. It will be necessary to put more bend in the 90° section to clear the body.

J. Re-attach all coolant hoses.



Fig. 13-b



Fig. 13-c

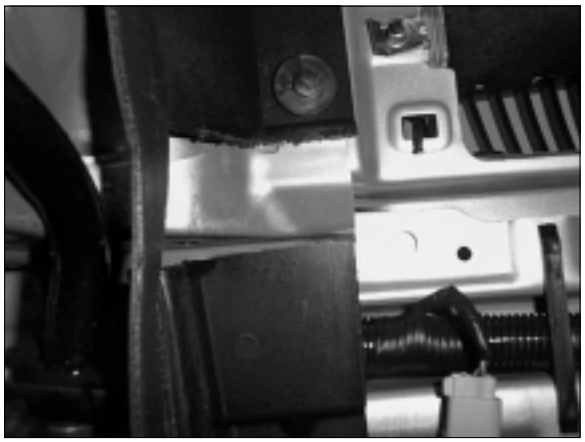


Fig. 13-d

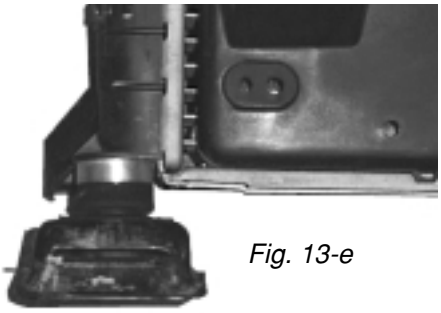


Fig. 13-e

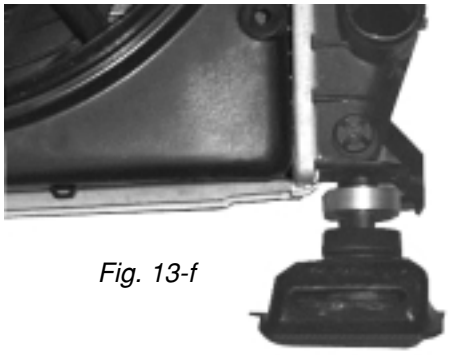


Fig. 13-f

* *Not required on Contour installation.*

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13. AIR CONDITIONING MODIFICATIONS, cont'd.



Fig. 13-g

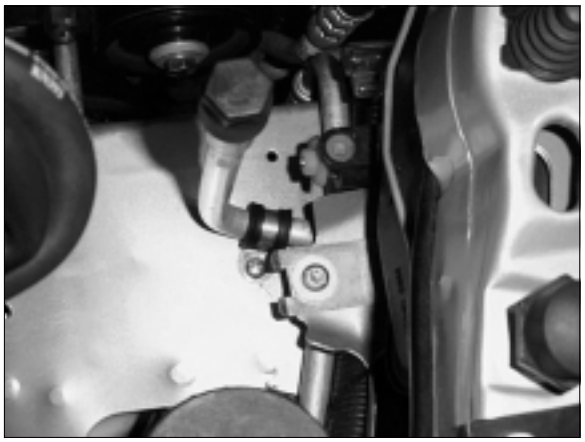


Fig. 13-h

14. AIR INLET

A. Install the 1" x 90° and 1/4 NPT x 90° x 3/8" hose barb fittings into the plastic inlet duct. (See *Fig. 14-a*.)

B. Attach the supplied flex duct to the inlet duct and secure it with the supplied clamp.

C. Slide the inlet duct and #56 clamp over the supercharger inlet. Do not tighten.

> ***NOTE:*** *The fit may be very tight. Apply a small amount of moly paste or antiseize to help with installation.*

D. Join the two valve-cover breather vents using the supplied TEE and 3/8" rubber hose. Connect the remaining leg of the TEE to the 3/8" barb on the plastic inlet duct with the remaining length of 3/8" hose.

E. Drill three holes per template and mount the mass air flow meter bracket with the three sheet metal screws provided. Secure the mass air meter to the supplied filter adapter through the mass air bracket. Install the air filter on the filter adapter using the clamp provided.

F. Using the sleeve and clamps provided install the U-shaped duct between the mass air meter and the flex ducting. (See *Fig. 14-b*.)

G. Confirm proper alignment of inlet duct and tighten.

H. Install the rubber grommet into the 9/16" hole in the inlet duct. Insert the stock IAT sensor into the grommet. Cougar models may require a wire extension to reach the sensor. Wires and connectors are supplied in the kit. Some model years may require filing on the plastic IAT sensor to allow complete insertion into the duct.



Fig. 14-a



Fig. 14-b

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15. SUPERCHARGER DISCHARGE/BYPASS ASSEMBLY

A. Remove the stock PCV valve and install the supplied valve in its place. (See *Fig. 4-a* on page 4.)

B. Slide the 1"x 4-1/4" hose onto the supplied discharge tube and secure with the #16 hose clamp provided.

C. Install the supplied compressor bypass valve onto the 1" hose attached to the discharge duct with the bypass vacuum nipple pointing away from the discharge fitting and secure it with a #16 hose clamp.

D. Using the 5/32" TEE and hose, splice the bypass nipple into the previously installed vacuum hose attached to the FMU lid.

***E.** Install the 2-1/2" silicone sleeve and #40 hose clamp on the throttle body.

F. Install the discharge duct on the supercharger discharge using the 2-1/2" silicone sleeve and two #44 hose clamps. Slide the other end of the discharge duct into the sleeve on the throttlebody and secure it with a #44 hose clamp. (See *Fig. 15-b*.)

G. Connect the supplied 3/4" x 90° rubber elbow to the discharge duct and secure it with a #10 hose clamp. Attach the remaining end to the IAC. (See *Fig. 15-c*.)

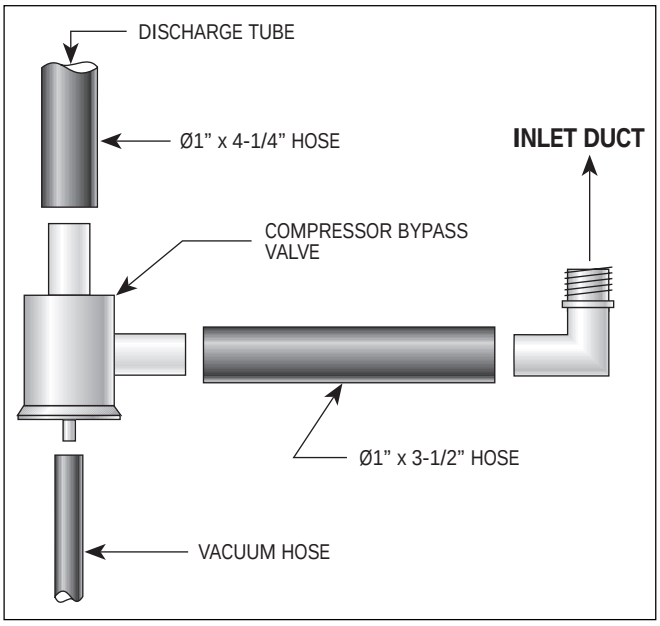


Fig. 15-a



Fig. 15-b

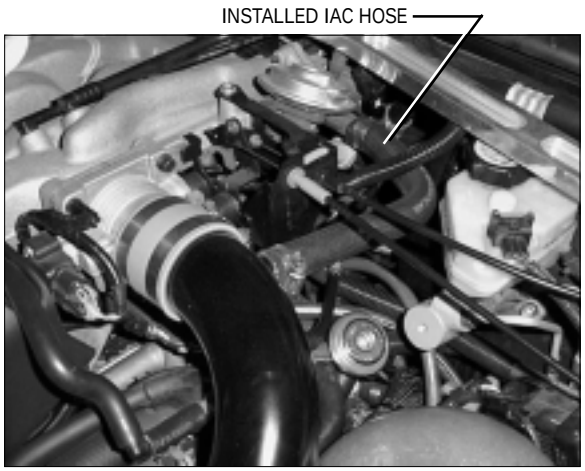


Fig. 15-c

**SVT Contour models are to install the supplied 2.75 to 2.50 reducer and a #44 clamp.*

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Battery Relocation Supplement

1998-2001 Model Years

NOTE: *The bracketry/hardware sold in this option requires the purchase of a Performance Distributors battery part #5575B (top post).*
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COUGAR/COUNTOUR BATTERY RELOCATION, cont'd.

> ***NOTE:*** *It is important that you use Di-electric grease with all the battery connections.*

F. Take the negative wires coming off of the original battery and cut them from the distribution manifold. Combine the wires with a lug end terminal and ground to the engine compartment. With the supplied black wire attach a lug end terminal to one end. Attach the terminal to a place on the chassis. *(Remove all paint and debris from around the hole to ensure a good electrical connection.)* On the opposite end, cut the wire to length and connect a battery terminal.

G. Take the battery terminals from the black and red wire and connect them to their corresponding terminals on the battery. (See *Fig. 4*.)

H. In the engine compartment, on the driver's side fender area, use a 1.25" hole saw and make a hole to mount the remote positive power terminal. (See *Fig. 5*.) If properly placed, it will mount behind the existing box. Now mount the terminal.

> ***NOTE:*** *The terminal will need to be a snug fit.*

I. Cut the supplied 1/0 red wire long enough to reach from the remote terminal to the positive terminal on the battery. On each end crimp a lug end terminal. Attach one lug to the battery and one lug to the remote terminal. (See *Fig. 6*.)

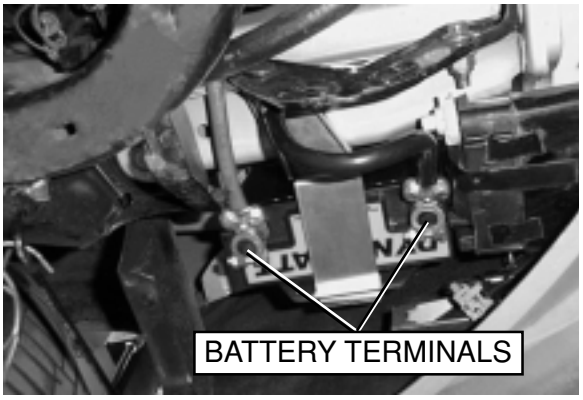


Fig. 4

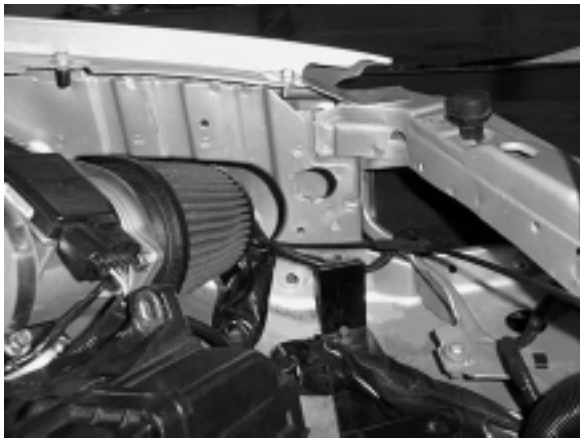


Fig. 5

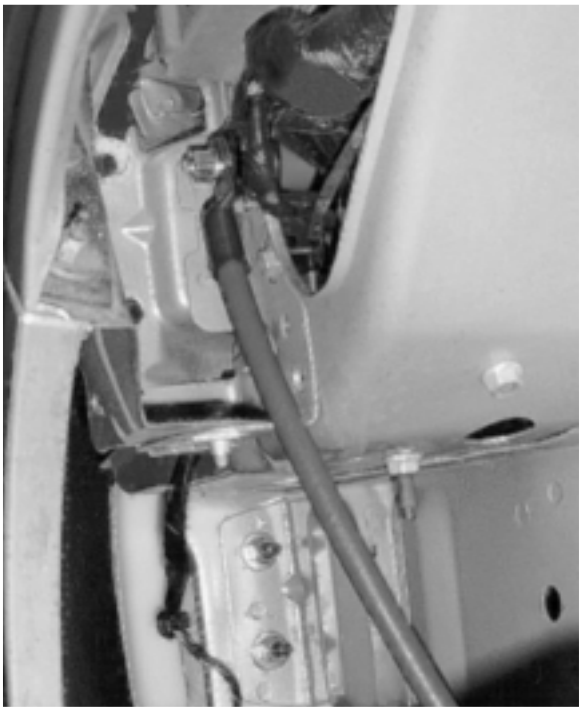


Fig. 6

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COUGAR/COUNTOUR BATTERY RELOCATION, cont'd.

J. Take the fuse box mounting bracket and mount it to two of the original battery mounting plate holes using two of the original bolts to secure it. (See *Fig. 7*.) Attach the fuse box to the bracket and secure it with a 1/4"-20 x 1/2" bolt and nut.

K. Reinstall the plastic skirting to the car and inner fender.

(Cougar only.) Reinstall the driver's side headlight.

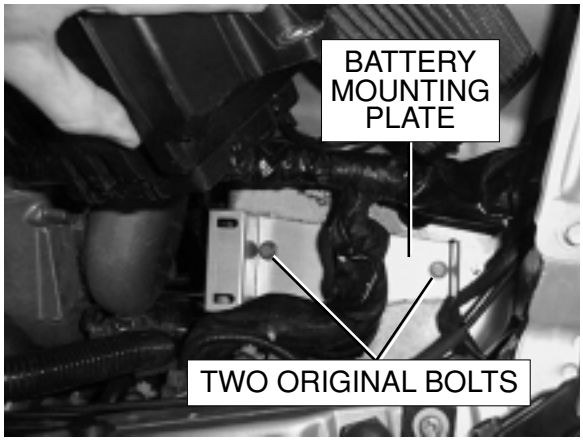


Fig. 7

COUGAR BATTERY RELOCATION WIRING SCHEMATIC

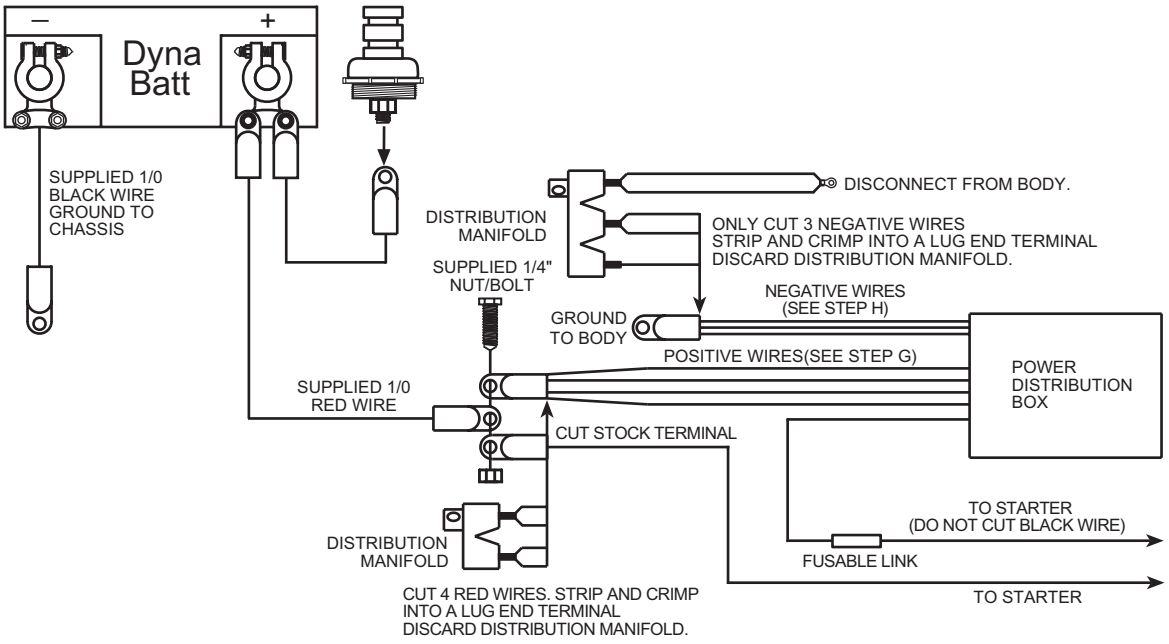


Fig. 8

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